

APPENDIX A
SYSTEM FOR THE EVALUATION OF TESTING LABORATORIES



Arizona Department of Transportation

Intermodal Transportation Division – Materials Group

1221 North 21st Avenue Phoenix, Arizona 85009-3740
Phone (602) 712-7231 FAX (602) 712-8138

Janet Napolitano
Governor

Victor M. Mendez
Director

Debra R. Brisk
Deputy Director

ADOT SYSTEM FOR THE EVALUATION OF TESTING LABORATORIES

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SCOPE OF SYSTEM

The Arizona Department of Transportation (ADOT) System for the Evaluation of Testing Laboratories has been implemented to formally approve materials testing laboratories to perform sampling and testing activities for ADOT. On all projects advertised/awarded by ADOT, the materials testing laboratory must satisfy the qualification criteria as specified herein and be approved by ADOT Materials Group prior to performing materials sampling and testing activities for the Department. For Certification Acceptance projects that are advertised/awarded by a local government agency, AASHTO accreditation in applicable test methods is sufficient. Those laboratories submitting asphaltic concrete mix designs must also meet the requirements of *Materials Group Policy and Procedure Directive No. 96-6, "Asphaltic Concrete Mix Design Proposals and Submittals"*, and be approved by the Materials Group Bituminous Engineer. Approved laboratories will be periodically evaluated to verify compliance with the system. The system is administered by the ADOT Materials Group Quality Assurance Section, under authority delegated by the State Engineer. The procedure will apply to any laboratory performing sampling and testing activities for the Department, directly or as a subconsultant.

The *ADOT System for the Evaluation of Testing Laboratories* is revised periodically. The current version can be viewed on the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>). The *ADOT System for the Evaluation of Testing Laboratories* is accessed as a selection item in either the Laboratory Inspection Program or the Proficiency Sample Program on the Materials Quality Assurance Section website.

ADOT SYSTEM CRITERIA

The ADOT system acknowledges the mechanism, established by the *AASHTO Accreditation Program (AAP)*, to recognize the competency of a laboratory to perform specific tests on construction materials. ADOT approved laboratories must obtain and maintain AASHTO accreditation for any AASHTO or ASTM test method specified or referenced by a contract document. In addition, AASHTO accreditation is required for any AASHTO or ASTM test method which an Arizona Test Method modifies.



A copy of AASHTO accreditation certificates must be transmitted to the ADOT Materials Group Quality Assurance Engineer immediately upon receipt by an ADOT approved testing laboratory.

The following requirements are in addition to Section 3, "AASHTO Accreditation Program Criteria", of the *AASHTO Accreditation Program Procedures Manual*:

3.1 Quality System Criteria is modified to add the following:

The laboratory shall have and maintain the current ADOT Materials Testing Manual. The manual shall be readily accessible to all laboratory personnel.

3.2 On-Site Inspection and Quality System Evaluation Criteria is modified to add the following:

Any laboratory performing materials sampling and testing in Arizona, or within 50 miles of its borders, for ADOT projects shall be open for inspection by Arizona Department of Transportation personnel at any time. ADOT Materials Group Quality Assurance Section shall regularly schedule and conduct periodic on-site equipment and procedural inspections at all approved permanently based laboratories. The laboratory shall demonstrate the capability to perform tests according to the current ADOT Materials Testing Manual for those testing services offered under the scope of this system.

Approval will be given for those AASHTO/ASTM test methods which the laboratory has obtained AASHTO accreditation and which are successfully demonstrated during the ADOT inspection. Approval will be given for those Arizona Test Methods which modify AASHTO/ASTM methods, if the laboratory has AASHTO accreditation for the AASHTO/ASTM methods, and the Arizona Test Methods are successfully demonstrated during the ADOT inspection. Approval will also be given for unique Arizona Test Methods that are successfully demonstrated during the inspection.

A written response to any deficiencies noted during ADOT inspections shall be submitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of notification. Failure to respond to noted deficiencies within the 30 day limit will be grounds for revocation of ADOT approval.

Laboratory inspections performed by ADOT Materials Group Quality Assurance Section will be conducted according to Table 1.

To perform acceptance or quality control sampling and testing on a project, a lab facility must be located within 50 miles of the project site. In addition, the lab must be completely equipped for all phases of project-related sampling and testing, as required by the contract specifications.

At least 10 days prior to any phase of construction requiring materials acceptance sampling and testing by the laboratory, the Resident Engineer shall notify the ADOT Materials Group Quality Assurance Engineer in writing to request an inspection of a portable or satellite laboratory. Portable or satellite laboratories contracted to do materials acceptance sampling and testing on ADOT projects shall be set up and available for inspection by ADOT at least 5 days prior to any phase of construction requiring materials acceptance sampling and testing by the laboratory.

As an addendum to their AAP Quality Systems Manual, each approved lab shall submit, for review and acceptance by ADOT, written policy and procedures that address the following issues:

1. How portable or satellite laboratories maintain test method and specification compliance while sampling and testing materials for ADOT projects.
2. How inspection and calibration of sampling and testing equipment at portable or satellite laboratories are performed and documented.
3. How the correlation testing program is performed between the accredited "parent" laboratory and its portable or satellite facilities.

Copies of AMRL and CCRL inspection reports and responses to any deficiencies shall be transmitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of receipt of the inspection report.

Additional information regarding laboratory inspections can be found in Series 900 "Materials Quality Assurance Program" of the ADOT Materials Testing Manual, obtained from Materials Group Quality Assurance Section, or by accessing the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>).

3.3 Proficiency Testing Criteria is modified to add the following:

The laboratory shall participate in the ADOT Proficiency Sample Program, performing at least those test methods for which ADOT approval has been granted. A written response to any deficiencies shall be submitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of notification. Failure to respond to deficiencies within the 30 day limit will be grounds for revocation of ADOT approval. If a laboratory does not perform testing on 2 consecutive sets of proficiency samples of the same material type, that laboratory will be removed from the ADOT Proficiency Sample Program entirely. If that laboratory is also an ADOT approved laboratory, **it will lose ADOT approval to perform sampling and testing on ADOT projects.**

Copies of AMRL and CCRL proficiency sample test result reports and responses to deficiencies shall be mailed to the ADOT Materials Group Quality Assurance Engineer within 30 days of receipt of the final report.

Additional information regarding the ADOT Proficiency Sample Program can be found in Series 900 "Materials Quality Assurance Program" of the ADOT Materials Testing Manual, obtained from Materials Group Quality Assurance Section, or by accessing the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>).

3.4 Personnel Qualification Criteria is modified to add the following:

An individual who is **responsible for supervising sampling and testing** shall meet the requirements given in Table 2 for the appropriate field in which sampling and testing is being performed.

Individuals who **perform actual sampling and testing** shall meet the requirements given in Table 3 for the appropriate field in which sampling and testing is being performed, and shall be supervised by an individual who meets the requirements of Table 2 for the appropriate field in which sampling and testing is being performed.

TABLE 1
LABORATORY INSPECTION REQUIREMENTS

TYPE OF LAB	Evaluate personnel, Quality Systems Manual, etc.	<u>Inspect</u> methods & equipment <u>on</u> <u>a regular</u> <u>schedule or</u> <u>as needed</u>	Approve via Acceptance Letter	Include in ADOT Directory of Approved Testing Labs	Performing acceptance sampling and testing for ADOT: <u>INSPECT PER PROJECT</u>	Performing quality control sampling and testing for Contractor: <u>INSPECT PER PROJECT</u>
All ADOT Labs Statewide	X	X	X			
AASHTO Accredited Independent Labs within Arizona* which are ADOT approved	X	X	X	X		
Satellite Labs** within Arizona* of an ADOT Approved Lab		X			X	AS REQUESTED BY THE RESIDENT ENGINEER
Satellite Labs** within Arizona* of an out-of-state AASHTO accredited independent Lab which is not ADOT Approved	X	X	X		X	X
Portable Labs*** within Arizona* of an ADOT Approved Lab					X	AS REQUESTED BY THE RESIDENT ENGINEER

* Operating within Arizona, or within 50 miles of Arizona borders.

** Any permanently based lab facility operating under the authority, and AASHTO accreditation of, a main laboratory facility ("parent" lab).

*** Portable lab facility operating under the authority, and AASHTO accreditation of, a main laboratory facility ("parent" lab).

TABLE 2	
REQUIREMENTS FOR SAMPLING AND TESTING SUPERVISOR	
Soils and Aggregate	
<u>Field</u>	<u>Laboratory</u>
Arizona Technical Institute (ATI) “Field” certification plus one of (a) through (g) below.	Arizona Technical Institute (ATI) “Laboratory Soils/Aggregate” certification plus one of (a) through (g) below.
Asphaltic Concrete	
<u>Field</u>	<u>Laboratory</u>
Arizona Technical Institute (ATI) “Field” certification plus one of (a) through (g) below.	Arizona Technical Institute (ATI) “Asphalt” certification plus one of (a) through (g) below.
Concrete	
<u>Field</u>	<u>Laboratory</u>
American Concrete Institute (ACI) “Concrete Field Testing Technician Grade I” certification plus one of (a) through (g) below.	American Concrete Institute (ACI) “Concrete Strength Testing Technician” certification plus one of (a) through (g) below.
<p>(a) Professional Engineer, registered in the State of Arizona, with one year of highway materials sampling and testing experience acceptable to the Department.</p> <p>(b) Engineer-In-Training, certified by the State of Arizona, with two years of highway materials sampling and testing experience acceptable to the Department.</p> <p>(c) Obtained a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology, Construction, or related field acceptable to the Department; and with three years of highway materials sampling and testing experience acceptable to the Department.</p> <p>(d) Certified by the National Institute for Certification in Engineering Technologies (NICET) in the Construction Materials Testing field as an Engineering Technician (Level III) or higher in the appropriate subfield in which sampling and testing is being performed.</p> <p>(e) Certified by NICET in the Transportation Engineering Technology field as an Engineering Technician (Level III) or higher in the Highway Materials subfield.</p> <p>(f) Certified by NICET as an Engineering Technician, or higher, in Civil Engineering Technology with five years of highway materials sampling and testing experience acceptable to the Department.</p> <p>(g) An individual with eight years of highway materials sampling and testing, and construction, experience acceptable to the Department.</p>	

TABLE 3 REQUIREMENTS FOR SAMPLING AND TESTING TECHNICIAN	
Soils and Aggregate	
<u>Field</u>	<u>Laboratory</u>
Arizona Technical Institute (ATI) “Field” certification.	Arizona Technical Institute (ATI) “Laboratory Soils/Aggregate” certification.
Asphaltic Concrete	
<u>Field</u>	<u>Laboratory</u>
Arizona Technical Institute (ATI) “Field” certification.	Arizona Technical Institute (ATI) “Asphalt” certification.
Concrete	
<u>Field</u>	<u>Laboratory</u>
American Concrete Institute (ACI) “Concrete Field Testing Technician Grade I” certification.	American Concrete Institute (ACI) “Concrete Strength Testing Technician” certification.

Additional information regarding certification requirements can be obtained from ADOT Materials Group Quality Assurance Section, or by accessing the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>).

3.5 Additional General Criteria is modified to add the following:

Copies of a laboratory’s notification to or from AASHTO of any major change in its quality system, capability to perform tests for which it is accredited, laboratory ownership, location (for permanent facilities), managerial personnel, facilities, and any other change which may affect the scope of its accreditation shall be transmitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of when the change occurs.

The ADOT Materials Group Quality Assurance Engineer must be notified within 30 days of changes in supervisory and key technical personnel.

To be eligible to perform referee testing on ADOT projects as an independent testing laboratory, the laboratory must provide proof to the Department of their independent status by submitting a letter to the ADOT Materials Group Quality Assurance Engineer indicating all individuals and corporations which have ownership of the laboratory. In addition, the letter must indicate that each of the owners of the laboratory is devoid of any ownership in contracting firms or materials suppliers who perform work for the Department.



James P. Delton
Acting Assistant State Engineer
Materials Group